

and heart in which was found
a fond repose

These Eyes that were the windows
of my prison -
and lips thro which my prayers
to God have risen

From these, all these, death's
angel bids me sever.

Dear comrade body fare you
well forever

I go to mine heritage
and going go with all the
joy the freed soul can know

Yet in my spirit wanderings I
trust - I may sometimes pass near
your sacred dust

Fourth Dimension

In the evolution of the line into the square and the square into the cube a new form results whose parts are those of the previous units. Thus we form a square with four lines.

These lines are the units of the structure of the square. Six Squares are added to each other to form a cube.

The units of the structure of the cube are 6 squares. It is evident therefore that if we add cubes together we obtain a new form whose units are cubes.

In the Square the 4 lines and 4 points are visible. In the cube the lines and points of all the squares are visible. In the 4th dimensional figure the lines, squares and cubes are all visible.

Human beings and all beings living in three dimensional bodies cannot have access to any other dimensional existence or be in any way conscious of anything outside of the particular three dimensional edgescrap or beyond their boundaries.

If such limitations did not exist our powers would be very marvellous such as would be possible to us as we are to which add freedom from our boundaries that limit us physically.

The universe seems vast beyond all comprehension space is to us all but incomprehensible. This would not be so if we could pass our boundaries. The distance from star to star would be but a little flight and thus would disappear all concepts formed by our inhibition such as bound us now.

Inasmuch as we have lines
and a form constructed of lines
of 2 dimensions called a square.
and a figure constructed of planes
or squares called a cube ^{having 3 dimensions} then we should
have a form composed of cubes that
that would have to be known as
4th dimension

are there not alone being left
with units of four units of one
three units of four units and
three units of four three units
of four. Having obtained four
that are solid the next evolution
would be expansion of that form.
The expansion of the three dimensional
form would then be the fourth
dimension of evolving form. The
next would be the fifth and so
on until the ego at work has come
to that condition that is a mirror
of its evolving process and form.

No Matter how vast we may make
three space - even if it be extended to the
boundaries of the universe if it were
possible - fourth dimension would still
bear the same relation to three space that
three space bears to two space.

The ratio of magnitude of three space is
determined by two space. The ratio of
four space is determined by three space.

The figure produced by placing
the cube where the square was placed
in the mirror is the figure of 3dimer-
simas whilst the cube is the cube and
not to be confounded with this new
figure



The subdividing of a square and
the movement of its subdivided parts
in the direction of third dimension makes
of the square a condition of third dimen-
sion as related to its smaller squares.

In a like manner a line may
be subdivided and its subdivisions
moved to positions that exist in
two dimensions line If
— moved line

This broken line is viewed from A
it will appear to be the same as
before it was moved.

It follows therefore that if we subdivide
a cube and move its subdivided parts
in the direction of fourth dimension it
will appear as a cube still when viewed
from fourth dimension.

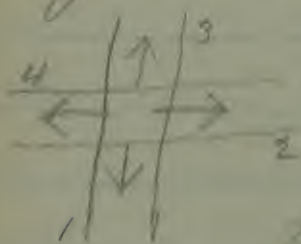
The Fourth dimension

formed by the movement
outward of the contents of a
cube in the direction of its
faces one half of the cube
appearing on each face

a line has length only

A Square has two dimensions
measured along the lines that
form its boundaries

The square is produced
by moving the lines 1. 2. 3. 4



in the direction of the
arrows outwardly from
the central square until
the square is produced



The square thus produced
has no surface and is not
space inclosed by the lines

1. 2. 3. 4.

One dimension converges from all directions upon a point

Two dimensions converge from all directions at right angles to one dimension

Three dimensions converge from all directions at right angles to two dimensions

Four dimension converges from all directions at right angles to three dimensions

A great number of lines can converge upon a point converging from all directions. To illustrate this use a ball of shellac and stick heated needles into it.

A large number of squares can converge upon a line from all directions at right angles to its length or one dimension.


Two cubes can converge upon the two faces of a square from two directions at right angles to its surface.

All angles Squares Tetrahedra
cubes and all regular or
symmetrical forms can be subdivided
into units of their form exactly like
themselves but smaller.
The sphere?

The true Mirror that will
reflect a correct Image

This produced by placing two Mirrors
at an angle of 90° This gives
the image correctly so that the
Right hand of the image is the same
as the original.

Mirrors producing 4 space

Two plane mirrors are mounted so as to form the two sides of a box  in their interior angles that are 90° we may produce the image of the lines forming the boundaries of a square by placing a wire rod having its ends slightly leveled the ends of the rod resting upon the faces of the mirrors marked by the two points A B

This will produce an image of the wire repeated three times and will form with rod itself a perfect square

The mirrors it will be seen are entirely in three space relative to the squares they may generate

We can now construct a set of mirrors that will make a cube of our square the mirrors extending wholly in the fourth dimension relative to the cube generated by the square in the same meaning of the term as we found in the generation of a square from a line

Law of transposition of Matter

all solid forms may be symmetrically subdivided. The reversing or turning outward of these subdivisions changes the original form to the next higher type. Planes occupy the places of the previous lines generally.

The new form will inclose twice the volume. This can only be true of this space.

Other Space - 4d. Dimensional
Circle

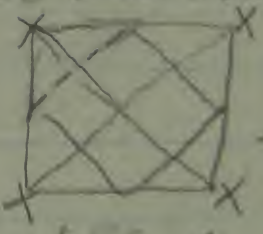
Transposition of Octahedron

The solid substance of the Octahedron may be subdivided into eight parts these sections may be turned inside out producing a cube whose inside shape is that of the Octahedron

a line has two ends - points
a square " four edges - lines
a cube " six sides - squares
a cuboid " eight faces - cubes

a line has two points
a square " four lines
a cube " six squares
cuboid " 8 cubes

two points bound lines three lines bound
triangles four triangles bound tetrahedrons
Tetrahedrons combine to construct
figures in two ways. The apex turned
in or out 20 tetrahedrons (apex in)
form a sphere having 20 faces

The crossing and intertwining of three
three dimensional figures at right
angles to each other is produced
by six pyramids that form a cube when
put together. a section is removed
from the corners of each of the pyramids
so that instead of the square forming
the base of the pyramid a new
square is produced.  the
X mark the sections to be removed
These when put together
so as to form a cube will produce
three three dimensional solids crossing
each other at right angles

Intersecting or Crossing Planes

Three planes cross each other at right angles in a cube of eight cubes

Four planes cross each other in the subdivision of a cube into six pyramids the faces of the cube being the bases of the pyramids

Four planes cross each other in the four square segment of the double pyramid formed by removing a double pyramid from its two apices to their meeting place at the centre

all pyramids are enclosed by eight planes The tetrahedron is enclosed by four planes In pairs they can cross at right angles

In three intertorned pyramids eight planes cross at its centre

Two intertorned Tetrahedrons inclose a space bounded by eight planes

The Dodecahedron is formed of six double pyramids and has six planes crossing in the direction of from line to line crossing the cube

Three Dimensional planes

These are found in the construction of a cube with cubes. The line of cubes extending from the corners to the centre and those extending from the edges inward represent a three dimensional plane that takes the place of the planes of the cube when the two dimensional pyramids are used.

These planes can be traced in all forms constructed of cubes. The cube face extends inside this line or form.

Boundaries are the limits of
all dimensions beyond which they
do not extend

What is a three dimensional boundary
how many boundaries has a point
in points lines planes and ?

Transposition of cubes
Occupied from positions hidden from
Inferior Middle Superior



The determination of a higher dimension from a lower is based upon the higher conditions of expression found in the lower

A square is divided into smaller squares thus



It will be seen at once

That the squares at the corner have an advantage over all the other squares since two of their sides are exposed whilst the others have only one

A cube is subdivided into smaller cubes

It is evident that the corner cubes occupy a superior position over the edge cubes and



these in turn have an advantage over the face cubes. The corner cubes having three sides exposed, the edge cubes have two and the face cubes one

From the preceding it is evident that

◇

The next higher form will have the following conditions. Its face cubes will have two sides exposed its edge cubes will have three and its corner cubes four sides exposed. This is realized in the Rhombahedron

having faces formed by the edges of cubes. The next higher form will have three sides of the cubes forming the faces exposed. The edges will have four sides exposed and the corners five. This is a description of the cubic Octahedron.

The next higher form will have four sides of its face cubes exposed, the edges will have five sides exposed and the corners six. This form is the Rhombic Dodecahedron having edges of cubes alternating with each other across its face.

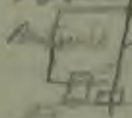
The next higher form will have five sides of the cubes forming its face exposed. Its edges will have six



and its corners six sides exposed. The next higher dimension. The cubes forming its sides will have six sides exposed. The edges will have six sides exposed. The corners will have six sides exposed. All the hidden cubes that have been hidden within the cube have in the seventh dimension become equal with those on the outside.



section of cube producing when
turned outward three twinning
cubes

a small knitting needle is fixed in a support so that it stands perpendicular to the surface of a table. a wire is bent to form the three sides of a square and fixed in a light support so that the knitting needle forms the other side of the square thus  if we look down in the direction of the length of the needle we see that the bent wire square occupies but a small portion of the region about the knitting needle, and that we could place a number of such squares around the knitting needle each of which would have the needle as their fourth side. *

It is possible for the figures
bounded by corners of planes
to be the third dimension
Three dimensions should have
3 planes crossing each other at
right angles

The Cube has on sub division six pyramidal sections having their apex at the centre. The Rhombic Dodecahedron has twelve pyramidal sections having same angle as cube but having the corners of the pyramid at the centre.

The Rhombic Dodecahedron has the same faces as the Octahedron except that they are cubic. By placing the eight sections of the Dodecahedron on the faces of the Octahedron the latter is changed to the former.

4

Points Bound lines, lines bound
planes, Planes bound cubes,
Cubes bound fourth Dimension

The adding of lines to any
two dimensional form does not
cause it to become a three dimen-
sional one if added in the same
plane we may thus make a four
out of a three sided figure or a five
sided but this does not cause it
to become three dimensional

The addition of faces to a three
dimensional figure cannot therefore
cause it to become fourth Dimensional
no matter how many may be added
we must assume therefore that the
statement that is made that the
fourth Dimensional cube has eight
faces is not correct since the
boundaries of two dimension stop
at the third dimension and the fourth
must be bounded by cubes and
also that it must have eight cubes

boundaries. In other words it
will have eight faces formed
of cubes. This figure is realized
in the cubic Octahedron.

A square has four one dimensional
sides, a cube has six two dimensional
faces. The cubic octahedron has eight
cubic faces.

Progression of boundaries ϕ

A line is bounded by two points
a square is bounded by four
lines a cube is bounded by
six squares. The addition
of more lines to a square will
not make it three dimensional
if the added lines are in the same
plane neither will the addition
of more squares to a cube make
it fourth dimensional if in the
same three space

an infinite plane may be
divided by two lines crossing it
at right angles so that plane
beings living in such a universe
would be unconscious of those
living on the other side of the lines
dividing one portion of two space
from the other (this is an assumption)

The cleaving of space by three infinit planes at right angles to each other divides space into eight three dimensional regions separated from each other by three boundaries that limit each of the three dimensions completely separating them from each other; since a three dimensional being could occupy and perceive that dimension only in which he was the other seven three dimensional spaces would be invisible and would lie beyond the boundaries of his world.

2 points determine a line 3 points determine
a plane 4 points determine three dimensions
5 points determine four dimensions

The movement of one point in one dimensional space produces a line

The movement of two lines in two dimensional space in directions that cross each other produces a square

The movement of three squares in three dimensional space in directions that cross each other produces a cube

The movement of four cubes in four dimensional space in directions that cross each other produces a cube of cubes

Controller for Aeroplane

An instrument that would control the movements of an aeroplane in a perfect manner is a compound Gyroscope having six heavy rotating disks mounted on separate shafts all shafts converging to one centre from the six fly wheels. Each pair of wheels will be on opposite ends of a shaft separated at its centre so as to rotate each pair in opposite directions.

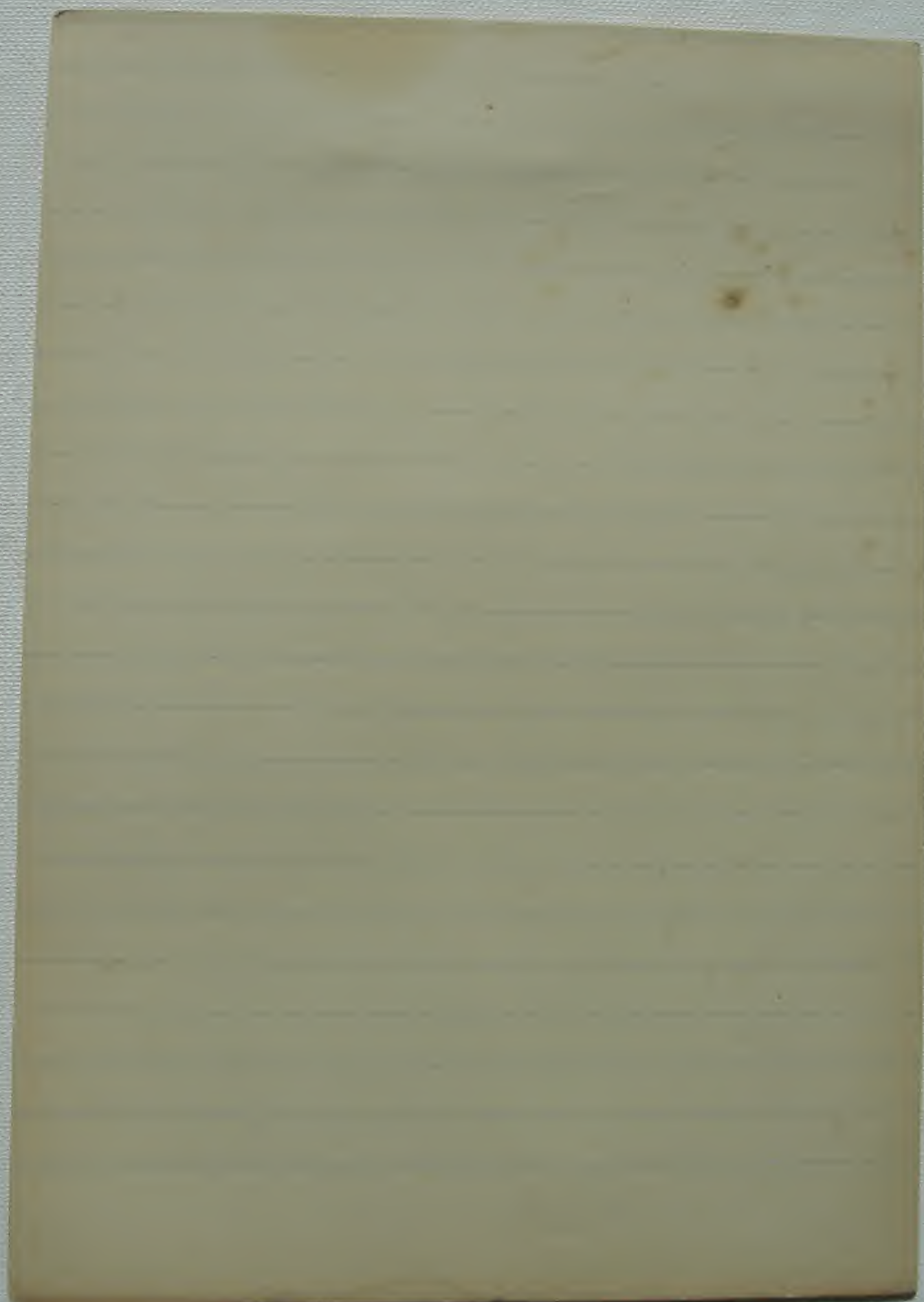
Such a device under high speed of rotation could not be twisted from its position in any direction.

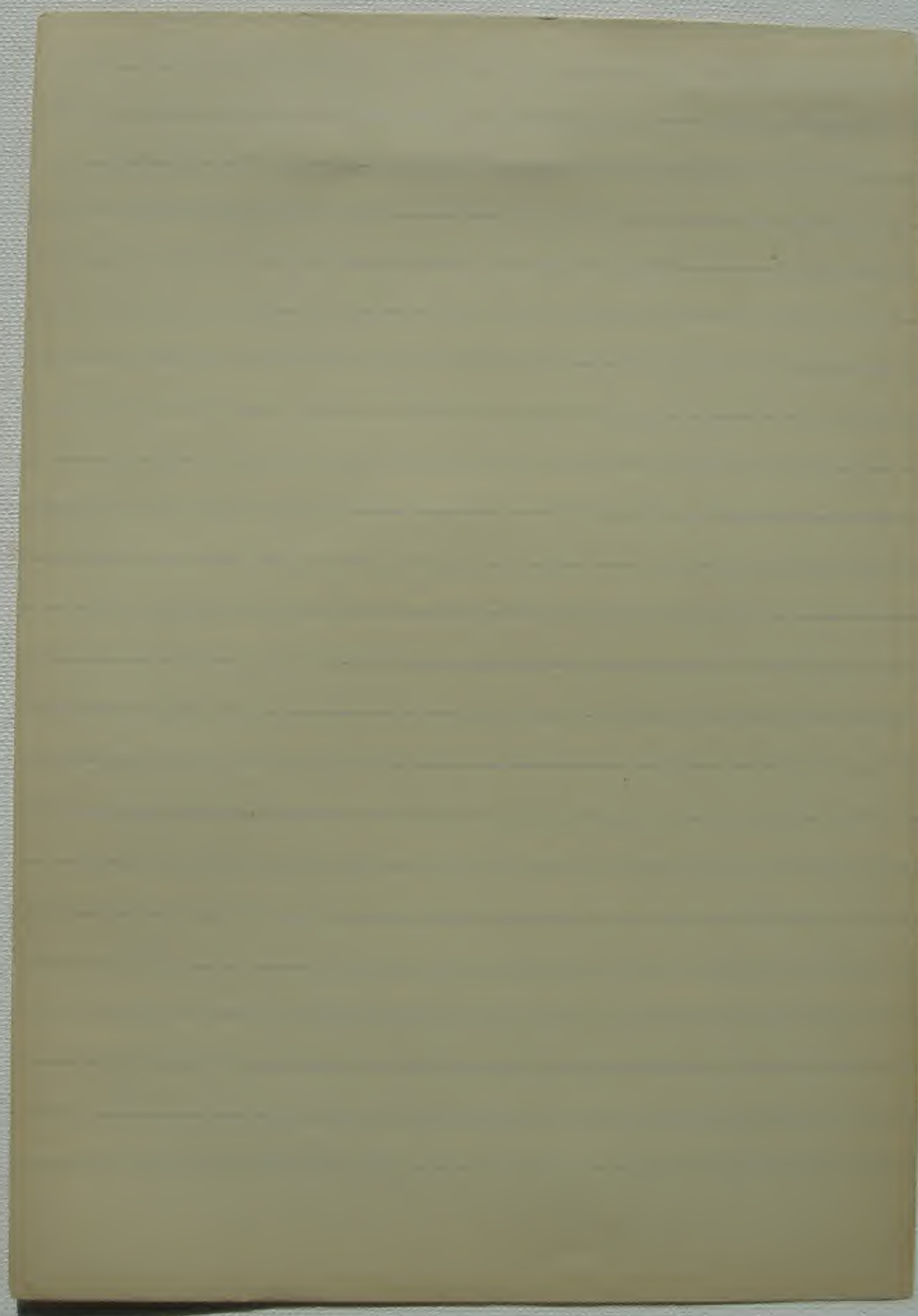
The aeroplane proper would be hinged to this device so as to change it to different angles for scaling circling descending.

Wind blasts could not tilt or turn such a device.

W. Thomas Butler, licensee

inventor of





So we must part forever.

And, though I long have beat
my wings and tried to, free from
thy narrow limits and control, forth
into space the true home of the soul.

Yet now, yet now that mine hour
is drawing near, I pause reluctant,
finding you so dear.

All joy awaits me in the realms
of God

Must you my comrade moulder ^{neath}
the sod?

I was your prisoner yet you were ^{my} slack!

Your captive, yet, obedient you gave
to all my earliest wishes and
commands

Whilst now to the wounds I give these
willing hands that loosed for me or
held the book I

These feet that trod wherever I bid them ^{read}
tread

These arms that clasped my ^{dear} ones
close